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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,637	10/29/2003	Anant Achyut Setlur	GLOZ 2 00188 RD31976/3244	5540

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EXAMINER	
KOSLOW, CAROL M	

ART UNIT	PAPER NUMBER
1755	

DATE MAILED: 08/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/696,637	SETLUR ET AL.	
	Examiner	Art Unit	
	C. Melissa Koslow	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-73 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) 15-25,28-35,39-47,64-66 and 69-72 is/are allowed.

6)☒ Claim(s) 1-14, 26, 27, 36-38, 48-50, 52, 54-60, 62,67, 68 and 73 is/are rejected.

7)☒ Claim(s) 51,53,61 and 63 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 29 October 2003 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 4/20/05,8/11/04,10/29/03.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DE 19,934,126 cited in the information disclosure statement filed 20 April 2005 and EP 1,095,998 and EP 1,116,418 cited in the information disclosure statement filed 11 August 2004 fail to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

WO 01/08452; WO 01/93342 and WO 03/102113 have been considered with respect to the provided English abstract.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: reference numbers 114, 116, 220, 214 and 216. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The disclosure is objected to because of the following informalities: It is unclear if the all the elements or at least one of the elements in the parenthesis in the formulas on pages 16 and 17 are required. In the art, elements in parenthesis can have either meaning. Applicants need to make it clear on the record which meaning they are using. Appropriate correction is required.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The subject matter of claims 12-14, 16, 24, 27-35, 38, 40-45, 47, 48 with respect to the blend with $(Tb,Y)_3Al_{4.9}O_{12}:Ce^{3+}$, 53-59, 61, 68 with respect to the blend with $(Tb,Y)_3Al_{4.9}O_{12}:Ce^{3+}$, 70 and 72 are not explicitly disclosed in the specification.

Claims 11, 26 and 67 are objected to because of the following informalities: These claims should be rewritten without the large gaps between the formulas and between the parts of the formulas. Appropriate correction is required.

Claim 61 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 51. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

These two claims are directed to the same phosphor composition.

Claims 11, 12, 26, 27, 48, 50, 52, 60, 62, 67, 68 and 73 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 52, 62 and 73 are indefinite since it lists Ce twice. The formula should be $(Ca_{0.99}Ce_{0.01})_3Sc_2Si_3O_{12}$.

Claims 50 and 60 are duplicates. Claims 52 and 62 are duplicates. Applicant is advised that should claims 50 and 52 be found allowable, claims 60-62 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claims 11, 12, 26, 27, 48, 67 and 68 are indefinite. It is unclear if the all the elements or at least one of the elements in the parenthesis in the formulas on pages 16 and 17 are required. In the art, elements in parenthesis can have either meaning. Applicants need to make it clear on the record which meaning they are using.

Claims 11, 26 and 67 are indefinite since it lists the following formulas more than once: $(Ca,Sr)S:Eu^{2+}$, $(Ba,Sr,Ca)MgAl_{10}O_{17}:Eu^{2+},Mn^{2+}$, $Sr_4Al_{14}O_{25}:Eu^{2+}$ and $(Ba,Sr,Ca)_5(PO_4)_3(Cl,F,Br,OH):Eu^{2+},Mn^{2+},Sb^{3+}$.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 36 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. patent 4,550,256.

This reference teaches a phosphor having the formula $Y_{3-x-y-z}Ce_xTb_yLu_zAl_{5-w}Ga_wO_{12}$, where x is 0.005-0.03, y is 0.03-0.4, z is 0.02-2 and w is 0.5-3. This formula falls within the claimed formula. The reference clearly teaches the claimed phosphor.

Claims 1-3, 6-8, 10, 11, 36 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 5,998,925.

This patent teaches a white light emitting lighting apparatus comprising the claimed LED which emits radiation in the range of 400-530 nm encapsulated in an encapsulant material which contains a blend of aluminate garnet phosphors. The first phosphor has the formula $Y_3(Al_{1-s}Ga_s)_5O_{12}$:Ce and the second phosphor has the formula $R_3Al_5O_{12}$:Ce, where R is at least one of Y, La or Gd and s is 0-1. It is known in the art that cerium substitutes for yttrium or R. The figures show and the reference teaches that the LED is in a reflector cup. Column 11, line 66 through column 12, line 1 teaches the amount of cerium in the phosphors is 0.003-0.2. These formulas fall within that of claims 1, 11 and 36. The reference clearly teaches the claimed apparatus and phosphor.

Claims 1-3, 6-8, 13, 14, 36 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 01/8452.

Claims 1-3, 6-8, 10, 13, 36 and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent 6,669,866.

U.S. patent 6,669,866 is the U.S. member of the patent family based on WO 01/8452.

The examples teach phosphors which fall within the formula of claim 36. Example 10 teaches a white emitting lighting apparatus comprising a GaInN LED with an emission peak of 450 nm encapsulated in an encapsulate in a reflector cup which comprises a blend of $(Tb_{0.67}Y_{0.29}Ce_{0.04})_3Al_5O_{12}$ phosphor and $(Tb_{0.17}Y_{0.79}Ce_{0.04})_3Al_5O_{12}$ phosphor. This apparatus has a CCT value of 4500. The reference clearly teaches the claimed phosphor and apparatus.

Claims 1-3, 5-8, 13, 14, 36 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 01/93342.

Claims 1-3, 5-8, 10, 11, 13, 14, 36 and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent 6,504,179.

U.S. patent 6,504,179 is the U.S. member of the patent family based on WO 01/93342.

These references teach white light emitting devices comprising a GaInN LED with an emission peak of 450 nm encapsulated in an encapsulate in a reflector cup and further comprises a blend of $Ca_8Mg(SiO_4)_4Cl_2:Eu^{2+}$, Mn^{2+} and $(Y_{0.33}Gd_{0.63}Ce_{0.04})_3Al_5O_{12}$. The phosphor blend can either be coated on the surface of LED or dispersed in the encapsulant. The CCT of this apparatus is 8000 and a CRI of 77. The reference clearly teaches the claimed phosphor and apparatus.

Claims 1-3, 5-7, 9, 13, 14 and 36-38 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent 6,596,195.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived

from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

This reference teaches phosphors which fall within the formulas of claims 1, 9, 36 and 37. The reference teaches the claimed apparatus having the claimed structures and comprising the claimed LEDs. The example teaches a lighting apparatus having a CCT of 3600-4300 and a CRI of 65-76. The reference teaches the phosphor and apparatus.

Claims 1-3, 5-8, 10, 11, 36 and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent application publication 2004/159846.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e).

Claims 1-3, 5-8, 10, 11, 36 and 38 are provisionally rejected under 35 U.S.C. 102(e) as being anticipated by copending Application No. 10/368,115 which has a common inventor with the instant application.

Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e), if patented. This provisional rejection under 35 U.S.C. 102(e) is based upon a presumption of future patenting of the copending application.

These rejections under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

This rejection may not be overcome by the filing of a terminal disclaimer. See *In re Bartfeld*, 925 F.2d 1450, 17 USPQ2d 1885 (Fed. Cir. 1991).

U.S. patent application publication 2004/159846 is the published application for application 10/368,115.

These references teaches white light emitting lighting apparatus having the claimed structure where the phosphor is a blend of $Sr_4Al_{14}O_{25}:Eu^{2+}$ and a phosphor that falls within the claimed formulas. The references teach the claimed phosphor and apparatus.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 49, 50 and 54-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over the abstract for the article by Pinalli et al.

This abstract teaches a phosphor having the formula $Ca_3Sc_2Ge_3O_{12}:Ce^{3+}$. While the abstract does not teach the amount of cerium, it is clear it is present in an amount sufficient to activate $Ca_3Sc_2Ge_3O_{12}$. This amount would at least overlap that claimed since the claimed range is that sufficient to activate $Ca_3Sc_2Ge_3O_{12}$. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The reference suggests the claimed phosphor.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,998,925; 6,596,195; 6,669,866 or 6,504,179 or WO 01/8452 or WO 01/93342 in view of U.S. patent 6,335,548.

As discussed above, U.S. patents 5,998,925; 6,596,195; 6,669,866 or 6,504,179 or WO 01/8452 or WO 01/93342 teach the claimed lighting apparatus. It does not teach that the LED can be replaced with other light sources that emit radiation in the range of 400-530 nm. U.S. patent 6,335,548 both teach OLEDs, which are organic emissive structures, are functionally equivalent to LEDs for use in lighting apparatus having the structure of U.S. patents 5,998,925; 6,596,195; 6,669,866 or 6,504,179 or WO 01/8452 or WO 01/93342. Therefore, one of ordinary skill in the art would have found it obvious to replace the taught LED with a functionally equivalent OLED in the apparatus of U.S. patents 5,998,925; 6,596,195; 6,669,866 or 6,504,179 or WO 01/8452 or WO 01/93342. The references suggest the claimed apparatus.

Claims 1-3, 6-8, 10, 13,36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/8452 or U.S. patent 6,669,866.

This reference teaches a phosphor having the formula $(Tb_{1-x-y}RE_xCe_y)_3(Al_{1-r}Ga_r)_5O_{12}$, where r is 0-1, $0 < y < 0.1$, x is 0 to 0.5-y and RE is at least one of Y, Gd and Lu. This formula overlaps that of claims 1, 9, 36 and 37. This reference teaches a white emitting lighting apparatus comprising a GaInN LED with an emission peak of 450 nm encapsulated in an encapsulate in a reflector cup which comprises at least one phosphor having a formula within the taught formula. This apparatus has a CCT of less than 5000. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242

(CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The reference suggests the claimed phosphor and apparatus.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 2, 5-7, 9 and 36-38 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 and 38-80 of U.S. Patent No. 6,596,195. Although the conflicting claims are not identical, they are not patentably distinct from each other because the patented phosphor formulas overlap those claimed in this applicants and thus the patented lighting apparatus suggests the that claimed since they have the same structure.

Claims 1-3, 5-11 and 36-38 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8-17 of copending Application No. 10/368115. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed phosphor formulas in 10/368115 overlap those claimed in this applicants and thus the claimed lighting apparatus in 10/368115 suggests the that claimed since they have the same structure.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 15-25, 28-35, 39-47, 64-66 and 69-72 are allowable over the cited art of record.

Claim 51, 53 and 63 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 26 and 67 are would be allowable if rewritten or amended to overcome the objections and the rejections under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Claims 27, 48, 68 and 73 would be allowable if rewritten or amended to overcome the rejections under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Claim 52 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

There is no teaching or suggestion of phosphors in the cited art of record having the formulas of claims 39-46, 51 and 52. Since there is no teaching or suggestion of these phosphors, and device containing these phosphors would be allowable. There is no teaching or suggestion in the cited art of record to use the taught $Ca_3Sc_2Ge_3O_{12}$:Ce in lighting devices having the claimed structure.

U.S. patent application publication 2005/156496 is cited as of interest since it teaches $Ca_3Sc_2Si_3O_{12}$:Ce in paragraph [0137], but it has an effective filing date after applicants'.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk
July 29, 2005

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